



**W1258**  
**LOAD MOMENT INDICATOR**  
**OPERATORS MANUAL**  
**Version 1.0**  
**Serial No.: 55M1258EOA**

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## FORWARD

The purpose of this manual is to provide the customer with the operating procedures essential for the promotion of proper machine operation for its intended purpose. It is important to over-stress proper usage. All information in this manual should be **READ** and **UNDERSTOOD** before any attempt is made to operate the machine.

**SINCE THE MANUFACTURER HAS NO DIRECT CONTROL OVER MACHINE APPLICATION AND OPERATION, CONFORMANCE WITH GOOD SAFETY PRACTICE IN THIS AREA IS THE RESPONSIBILITY OF THE USER AND HIS OPERATING PERSONNEL.**

**ALL PROCEDURES HEREIN ARE BASED ON THE USE OF THE MACHINE UNDER PROPER OPERATING CONDITIONS, WITH NO DEVIATIONS FROM THE ORIGINAL DESIGN. ALTERATION AND/OR MODIFICATION OF THE MACHINE IS STRICTLY FORBIDDEN WITHOUT WRITTEN APPROVAL FROM WYLIE SYSTEMS, INC.**

**REMEMBER THAT EQUIPMENT IS ONLY AS SAFE AS THOSE WHO OPERATE IT!**

Since safety of personnel and proper use of the machine is of primary concern, statements are used throughout this manual to emphasize certain areas. The following definitions indicate how a statement will appear in this manual.



Whenever this symbol is seen in this manual or on the machine, personnel safety is a concern. Take time to read and understand these statements!



**DANGER: INDICATES A POTENTIALLY HAZARDOUS SITUATION WHICH, IF NOT AVOIDED, COULD RESULT IN DEATH OR SERIOUS INJURY.**



**CAUTION: INDICATES A POTENTIALLY HAZARDOUS SITUATION WHICH, IF NOT AVOIDED, MAY RESULT IN MINOR OR MODERATE INJURY. IT MAY ALSO BE USED TO ALERT AGAINST UNSAFE PRACTICES.**

*IMPORTANT: Indicates a situation that may cause machine damage if not correctly followed.*

*Note: Provides information that may be of special interest.*

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## 1.0 INTRODUCTION

The Wylie W1258 is a Load Moment System designed to function as an operator's aid. The system has sensors installed in specific locations on the crane to monitor boom angle, boom length, cylinder pressures and anti-two-block condition. The system uses this information to calculate the hook load and radius, determine the crane's current rated capacity, and to check for an overload condition. When set-up and used in accordance with the manufacturer's instructions, the system will warn the operator of any approach to overload, overload, or two-block occurrences (when equipped with an anti-two-block warning system). A system display is located inside the cab or near the operator's controls to allow easy access to this information. There are three operational modes that the operator should familiarize himself or herself with, for the safe operation of the W1250 system:

**Normal Mode**

**Limit Setting Mode**

**Diagnostics Mode**

Any required system modifications or re-calibration are to be performed by qualified employees of Wylie Systems or their authorized dealers.

## SYSTEM OVERVIEW

The W1258 LMI measures four variables, uses operator selections, and optionally monitors external inputs to determine the boom positioning, hook load, and rated capacity of the crane. In addition, the system may also monitor the status of the anti-two-block condition on one or more hoist lines.

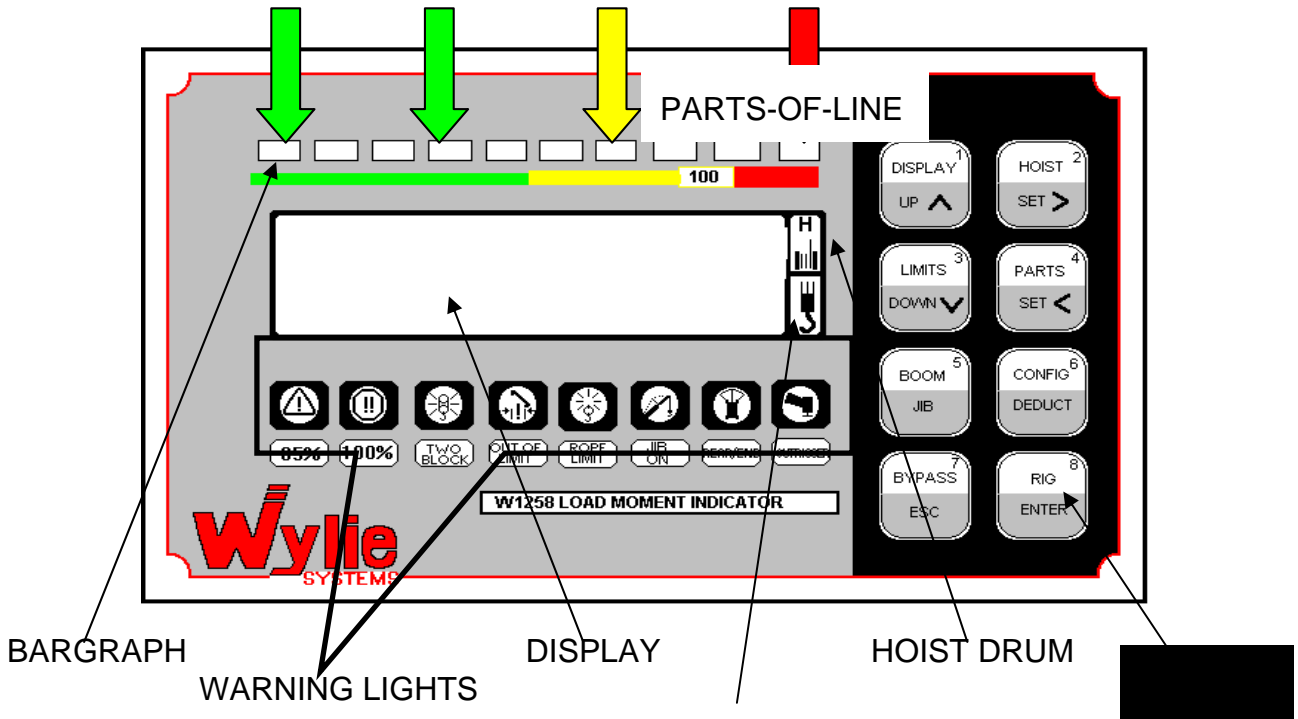
The four measured variables are the boom length, boom angle, cylinder bore-side pressure, and cylinder rod-side pressure. The operator selections are boom type, hoist selection, number of parts-of-lines, outrigger positioning, and applicable deductions. Depending upon the particular machine, some of the operator selections have only one choice available. Examples of external inputs are anti-two block switches, slew position monitoring, or outrigger positioning (extended/retracted may be auto-selected on some machines).

The system uses the cable reel, angle sensor, and the operator selected boom configuration to determine the boom's length and angle. In addition, it uses this same information to calculate the effective empty weight of the boom at this position. (This information is determined and entered during the calibration phase of the installation). The system next uses the cylinders' bore-side and rod-side pressures to calculate the current effective weight of the boom. The system subtracts the calculated empty boom weight from the current boom weight. The remaining pressure is a direct effect of load on the hook. Using the boom length, boom angle, and the boom configuration to calculate what load would generate this pressure when lifted. This calculated load is displayed as the hook load. The length, angle, boom configuration, outrigger position, slew position, and deduct selection are then used to determine the Safe Working Load (SWL) based on the manufacturer's published load charts for that particular machine.

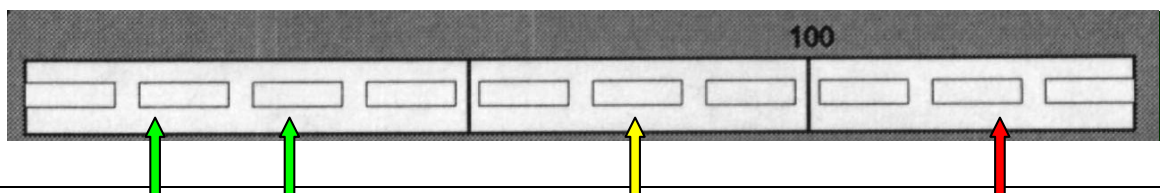
If installed, the system monitors the anti-two-block switches via the switch inputs and warns of an impending two-block condition.

**DISPLAY OVERVIEW:**

GREEN LIGHTS    YELLOW LIGHTS    RED LIGHTS



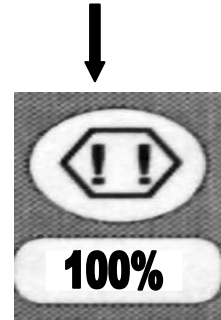
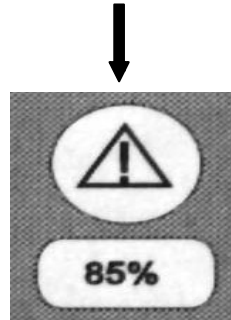
**BARGRAPH DESCRIPTION:**




GREEN LIGHTS:  
Safe Operation-0-84%  
Of Capacity Limits

YELLOW LIGHTS:  
Approaching Crane's  
Capacity Limit


RED LIGHTS  
Exceeding Crane's  
Capacity Limit



When the yellow bargraph lights are activated, the above warning light will flash and an audible alarm will sound, indicating the load is at or above 85% of the crane's capacity.

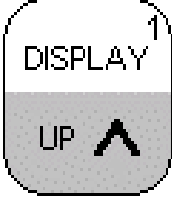
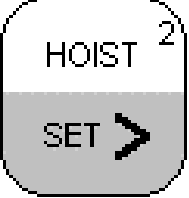

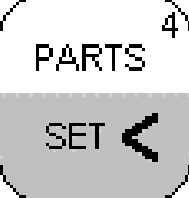


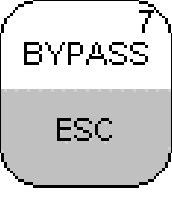

 **Operate with caution! The crane is working near its' operating capacity.**

When the red bargraph lights are activated, the above warning light will flash and an audible alarm will sound, indicating the load is at or above 100% of the crane's Capacity

 **The crane has exceeded safe operational ratings and is now in an unsafe condition. Hoist up and telescope out functions will be stopped. Use the hoist down and telescope in functions to return to a safe working area.**

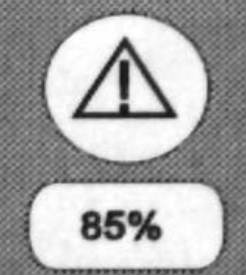
## 2.0 W1250 KEYPAD OVERVIEW

The W1250 Load Moment System keypad has 8 membrane keys. A number of the keys are dual purpose in their use. As an example the number 4 key has the following words/symbols on the key: PARTS, SET >. This key is used to change the parts-of-line value while in the main display and also to increase values while in the calibration menu. A description of each key is listed below.

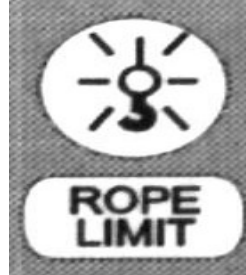
 <p>From the main display, pressing this key once will take you to the Secondary Display. Press twice for Error Menu, 3 times for Dimmer Adjustment, and 4 times for Diagnostics Menu. Also used to scroll up through Calibration menu.</p>	 <p>Use this key to decrease a limit or calibration value. Holding down the number 8 key simultaneously will increase the rate of change.</p>
 <p>Used to scroll down through Calibration Menu. On some units, this button is used to access LIMIT settings for Load, Angle, Length, Radius &amp; Tip Height. Press until the desired limit or value is displayed, then use button #2 or #4 to adjust the limit selection.</p>	 <p>Each time this key is pressed, the parts of line will increase by 1 until the maximum parts is reached, the parts of line will then return to 1 part. Also used to increase limit or calibration values</p>
 <p>Use this key to access the various Boom and Jib combinations. Once the correct configuration is shown, press the #8 key (Enter) to accept it</p>	 <p>Use this key to select the correct weight deductions for the current configuration To apply a DEDUCT, press this key until the appropriate DEDUCT is displayed, then press the #8 key (Enter) to accept it.</p>
 <p>Press this key to return to the main display window from any screen, or to exit a calibration function without changing the original value. For systems with function lock-out this key can be set up as a momentary bypass.</p>	 <p>Press this key to enter and accept calibration changes, or to accept changes in configurations or deducts. Also used to enter diagnostics from the first diagnostic screen.</p>

### 3.0 W1250 WARNING LIGHTS OVERVIEW

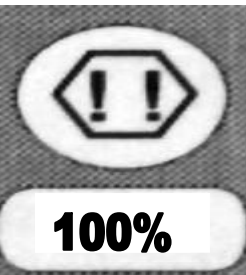
The W1250 Load Moment System has 8 Warning Lights. These lights will illuminate to warn you of a change in the operating condition. For areas that reflect a danger to the safe operation of the crane, the danger lights will illuminate Red and an audible tone will emit from the display. Caution lights will illuminate Yellow and status lights will illuminate green.




USE CAUTION, you have reached 85% of the maximum capacity, this light will flash on & off. This light is yellow in color. An audible alarm will also sound.



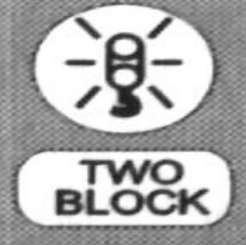
This light indicates that rated strength and number of parts-of-line of hoist rope limit the maximum load. Verify the parts of line are set to the correct value.




**DANGER!** The crane's **MAXIMUM CAPACITY** has been reached or exceeded. This light is red in color. The light will illuminate as a solid light. An audible alarm will sound




This light will illuminate when the jib is selected as a part of the boom configuration. It is a reminder that the hoist rope is over the jib




**DANGER!** This light will illuminate Red identifying that the crane has Two-Blocked. The lockout function will be engaged.



The system has detected that you are working over the front of the machine.



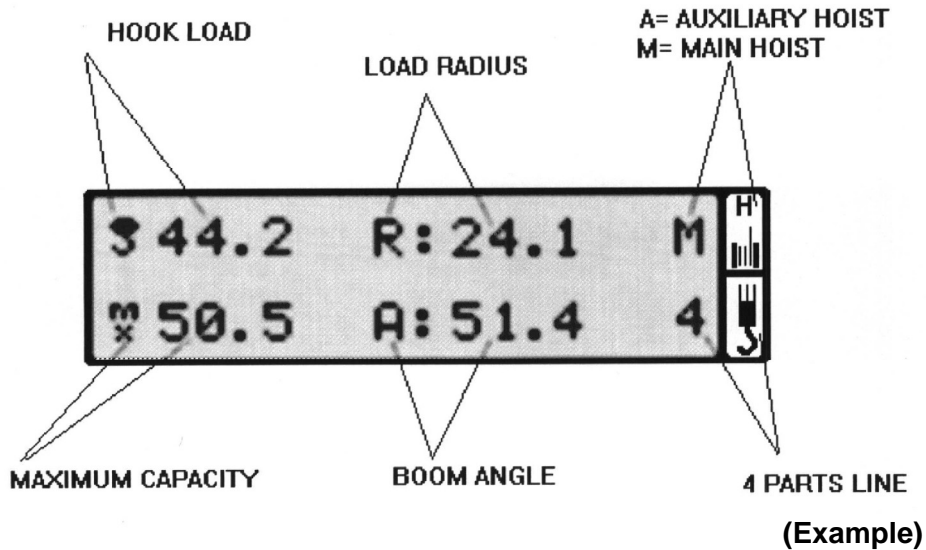
This light will illuminate when a preset limit has been reached. These can include high/low angle, maximum / minimum length, maximum radius, maximum height. A warning message will alternate with the normal screen.



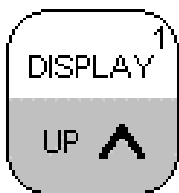
This light illuminates to indicate that an outrigger extended configuration has been selected.



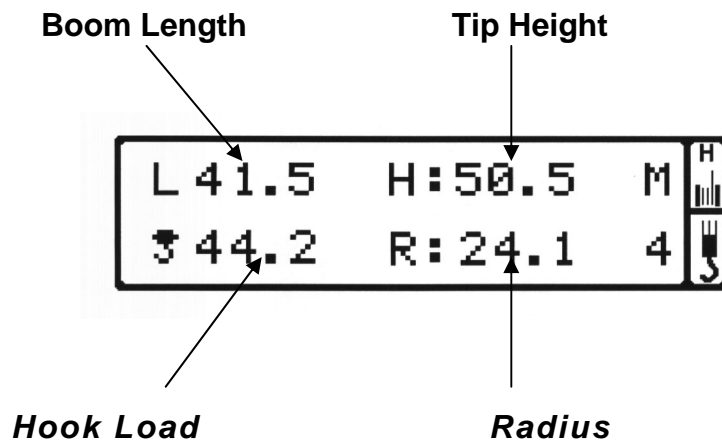
### 4.0 W1250 MAIN DISPLAY: (DEFAULT SCREEN)



### 4.1 W1250 SECONDARY DISPLAY



To switch from the main display to the secondary display, press the DISPLAY key once. The secondary screen will appear for 10 seconds, then return to the main display



## 5.0 OPERATING INSTRUCTIONS

When the power is turned on, the system briefly shows “Wylie System W1250”, displays the units of measure for three seconds, shows the message “Stabilizing System” for approximately seven seconds, and then goes into the normal operation mode as shown on page 6. As detailed previously, the normal operating mode displays the hook load, rated capacity or maximum load as set by the operator, radius, angle, the hoist selected and the parts-of-line.

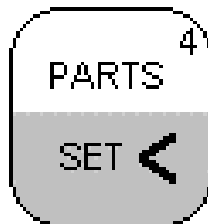
### 5.1 SYSTEM CONFIGURATION

In order to have the proper rated capacity and radius, the system must be configured properly. Failure to configure the system properly can cause dangerous conditions to occur. It can also cause a zero capacity if no chart is found to match the configuration as set by the operator.

The operator must verify the crane configuration each time he/she enters the crane and each time the configuration is modified.

The configuration conditions are located using the three buttons; PARTS; BOOM and DEDUCT.

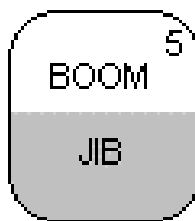
**PARTS**



The parts-of-line configured for the selected hoist is shown in the lower right corner of the display screen. To change it, press Button 4 (PARTS). The number of parts-of-lines will increase until the maximum available on the crane and then start over at one (1) part.

After you have changed the parts-of-line, the system automatically saves the change.

**BOOM / JIB**



By pressing Button 5 (BOOM / JIB) once, the display screen will display the current boom configuration. By repeatedly pressing Button 5, the indicator will select and display the various boom configurations available. Once displayed, a configuration is automatically selected. The operator can press either Button 7 (ESC) or Button 8 (Enter) to return to the normal display screen. If the operator does not use any buttons for ten (10) seconds, the display automatically defaults to the normal screen.

After a boom configuration is selected, the indicator will select the corresponding chart and radius calibration from memory. Therefore, a wrong configuration selection will give a wrong capacity and/or a wrong radius.

**DEDUCT**

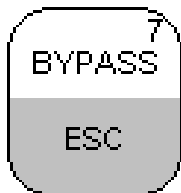
This button allows viewing of the selected tire/outrigger configuration and any deduct selected for the currently displayed hoist.

To verify the selections, make sure the desired hoist appears in the upper right corner of the normal screen. Press Button 6 (DEDUCT) once. The selection for tire/outrigger is displayed. Press button 6 again and the deduct selection is displayed. Pressing Button 6 again will show the tire/outrigger selection again.

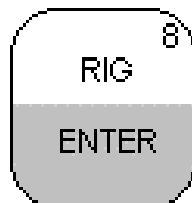
To change the selection in either tire/outrigger or deduct, press Button 6 (DEDUCT) to display either the tire/outrigger or the deduct selection. While being displayed, the selection can be changed by using Button 2 (SET >) and/or Button 4 (PARTS SET <). Once the selection is set correctly Button 8 (ENTER) can be pressed to return to the normal screen, or press Button 6 (DEDUCT) to toggle to the other selection (tire/outrigger or deduct) and again, by using Button 2 and/or Button 4 set a new value.

On some systems, the outrigger position is automatically sensed and selected.

## 5.2 MOMENTARY BYPASS FUNCTIONS

**OVERRIDE**

If a lockout or an external alarm is installed, it can be bypassed or over-ridden temporarily by pressing button 7 (BYPASS). This is a momentary bypass only. As soon as button 7 is released, the lockout condition returns.

**BYPASS**

If a lockout or an external alarm is installed, it can be bypassed or over-ridden permanently while rigging the crane. To engage the bypass, the boom must be below the pre-calibrated rig angle. Below this angle, the operator can press Button 8 and the

message "RIG" will appear in the screen. The message and the lock-out bypass will remain until the boom has been returned to the normal operating angle or reset.

### 5.3 DIMMER SETTING

You can adjust the intensity of the lights on the display by pressing the DISPLAY key three (3) times from the main display. Use the keys 2 & 4 to adjust the intensity. Ideal for nighttime use of the system

## 6.0 TROUBLESHOOTING

The W1250 System is equipped with an error menu and a diagnostic menu. If a malfunction occurs, verify that the configurations were correctly entered. As outlined in the introduction, these selections determine the hook load, SWL, and alarm conditions of the system. An incorrect selection of boom configuration, parts-of-line, or outrigger configuration will cause errors in these readings. If the problems still persist, call your nearest Wylie Systems office

### 6.1 ERROR REPORTING

The W1250 will identify failures in the operation of the software or hardware. Should a failure occur, the letter "E" will flash alternately with the Hoist Drum Letter in Normal mode. Pressing the DISPLAY key 2 times from the main display can access the ERROR REPORT. If an error(s) exists, a letter will appear in the Error Report Display. Refer to the error codes listed below for a description, write down on a piece of paper the error code letter(s) as they appear on the display, then contact Wylie Systems or an authorized dealer for support.

### 6.2 ERROR REPORT DISPLAY



## 6.3 ERROR REPORT CODES

**Table 1: Error Codes**

LETTER	DEFINITION
A	FAILURE IN SENSOR TX0 (Bore pressure transducer)
B	FAILURE IN SENSOR TX1 (Rod pressure transducer)
C	FAILURE IN SENSOR TX2
D	FAILURE IN SENSOR TX3
E	FAILURE IN SENSOR AIN0 (Angle sensor)
F	FAILURE IN SENSOR AIN1 (Length sensor)
G	FAILURE IN SENSOR AIN2
H	FAILURE IN SENSOR AIN3
I	FAILURE DUE TO I/O BOARD/LOW BATTERY
J	FAILURE DUE TO I/O BOARD/ FAILURE IN DR PLUS
K	FAILURE DUE TO I/O BOARD/ FAILURE IN HIS TIME-OUT
L	FAILURE DUE TO DISPLAY/ FAILURE WITH KEYPAD
M	FAILURE DUE TO DISPLAY/ FAILURE WITH LCD DISPLAY
N	FAILURE DUE TO DISPLAY/ FAILURE IN 8255 CHIP
O	FAILURE DUE TO MEMORY/ FAILURE EPROM BUSY
P	FAILURE DUE TO MEMORY/ FAILURE CHECKSUM EPROM
Q	FAILURE DUE TO MEMORY/ FAILURE CHECKSUM EEPROM
R	FAILURE DUE TO MEMORY/ CHECKSUM RAM
S	FAILURE DUE TO CHART/ FAILURE NO DUTY CHART
T	FAILURE DUE TO CHART/ CONFIGURATION NOT CALIBRATED
U	FAILURE DUE TO CHART/ FAILURE CHECKSUM CHART
V	FAILURE DUE TO CHART/ INVALID VALUE DETECTED
W	FAILURE DUE TO CHART/ DIMENSIONS MISSING

## 6.4 DIAGNOSTICS MENU

Once you have determined that the system has Error's, you may be asked to enter into the **Diagnostics Mode**. To enter into the Diagnostics Menu, press the DISPLAY key 4 times from the main display. The following screen will appear.



With this screen displayed, press Button 8 (ENTER) to enter the Diagnostic Menu. Refer to Wylie Systems or your dealer for additional information. Button 1 (DISPLAY UP ^) and 3 (LIMITS DWN ↓) can then be used to scroll through and observe the Diagnostic Menu options. To exit Diagnostic Menu and return to Normal Mode, press Button 7 (ESC).

**Table 2: Diagnostic Menu Selections**

SELECTION	DEFINITION
<b>AIN0</b>	Position of the angle sensor in volts (0.5-4.25V). As the boom raises the voltage should increase. As the boom is lowered the voltage should decrease
<b>AIN1</b>	Position of the length sensor in volts (0.5-4.25V). As you extend the boom voltage should increase. As you retract the boom, the voltage should decrease
<b>TX0</b>	Internal value assigned to Bore Pressure Transducer in bits (1024 max)
<b>TXI</b>	Internal value assigned to Rod Pressure Transducer in bits (1024 max)
<b>Pressure 1</b>	Current hydraulic pressure measured in bore side of lift cylinder in psi.
<b>Pressure 2</b>	Current hydraulic pressure measured in rod side of lift cylinder in psi.
<b>AIN6</b>	Value of the measured load in volts (0.25-4.0V)
<b>DR+</b>	The sensors supply voltage. It must remain at about 5.08V
<b>DIN</b>	Value of digital inputs, DINO to DIN3

## 7. ROUTINE MAINTENANCE

### WIRES

Check all wires for cuts or damages. Replace if needed.

**PERFORMANCE CHECK**

Perform a performance check every month and keep a log indicating the actual measurements and the displayed measurements. See details below.

**8. PERFORMANCE CHECK****ANGLE**

Verify the angle at 0 degree and at 75 degrees using an angle indicator against the boom. The angle displayed on the indicator must be between 0 degree and 2 degrees below the actual angle.

**LENGTH**

Verify the boom length when fully retracted and fully extended. The displayed length must be between zero and one foot longer than the actual boom length.

**RADIUS**

Verify the radius at 20 degrees and at 70 degrees fully retracted and fully extended for all boom configurations. The displayed radius must be between 0 and 10% greater than the actual radius.

**LOAD**

Verify the hook block weight and a load equal to 90% of the maximum line pull. The displayed weight with the load must be between 0 and 10% greater than the actual load.